

APPLICANT: HAIT, David  
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## **REMARKS**

The present response is intended to be fully responsive to all points of objection and/or rejection raised by the Examiner and is believed to place the application in condition for allowance. Applicant asserts that the present invention is new, non-obvious and useful. Favorable reconsideration and allowance of the claims is respectfully requested.

### **Status of Claims**

Claims 10-25 were previously pending in the application. New Claims 26-28 have been added. Accordingly, Claims 10-28 are now pending.

Applicant respectfully asserts that these amendments add no new matter.

### **Interview Summary**

Applicant thanks Examiners Carol See and Examiner Stafanos Karmis for their professionalism and courtesy at the in person interview with Applicant David Hait and Applicant's representatives Morris Cohen, Reg. No. 39,947, and Yamima Eadan (the undersigned) on May 10, 2010.

During the interview, agreement was reached that the calculation of node vega in each of Claims 10 and 17 is not taught in the references of record and that calculating a value of vega using a single tree in Claim 28 is not taught in the references of record. The Examiners also reserved the right to conduct further search of the prior art regarding these limitations.

### **Claim Objections**

In the Office Action, the Examiner objected to Claims 11-13 under 37 CFR 1.75(c), as being of improper for failing to further limit the subject matter of the machine claim 10, from which they depend.

Claims 11-13 have been amended in accordance with the Examiner's observations.

Accordingly, Applicant respectfully requests that the Examiner withdraw the objection to the claims.

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## **CLAIM REJECTIONS**

### **35 U.S.C. § 112 Rejections**

In the Office Action, the Examiner rejected Claims 10, 12, 17, 24 and 25 under 35 U.S.C. § 112, second paragraph, as being indefinite, and claims 11-16 and 18-25 for depending from rejected base claims.

In particular, the Office Action states that the phrases “using a function of the values for node vega computed at the nodes” and “using a function of the value of vega computed for the binomial tree” in Claims 10 and 17 and “using a recursive function of the values for node vega computed at the nodes” in Claims 24 and 25, are indefinite.

During the Interview of May 10, 2010, the Examiners agreed that, in light of the Specification, these phrases are definite.

The Office Action states that it is unclear how a value at “each node” can be the security price when the option is exercised, when exercise is at a single node. In accordance with the Examiner’s observations, claim 12 has been amended to more particularly and distinctly claim the subject matter which Applicant regards as the invention. It is respectfully submitted that Claim 12 is definite.

Accordingly, Applicant respectfully requests that the Examiner withdraw the rejections under 35 U.S.C. § 112.

### **35 U.S.C. § 101 Rejections**

In the Office Action, Claim 17 was rejected under 35 U.S.C. §101 and claims 18-23 and 25 were rejected for depending from a rejected base claim. It is submitted that all of the current claims are believed to present patentable subject matter.

In accordance with recommendations made by the Examiners during the Interview of May 10, 2010, Claim 17 has been amended to include “wherein each of the computing steps is performed by a computing device.”

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It is further noted that the U.S. Supreme Court currently has a significant case pending concerning the scope of §101. *See, Bilski v. Doll*, Docket No. 08-964 (S. Ct. 2009). Among the questions being addressed is the legal standard for determining whether a process is patent-eligible subject matter under §101. Thus, it is believed that the outcome of that case may have significant impact on determination of the applicability of §101 here, and on the proper or best scope of the pending claims. In view thereof, it is respectfully requested and submitted that any further action under § 101 should be based on the Supreme Court's expected decision in that case and/or deferred until that decision is issued.

With respect to further modifications to the claims, if any, it is likewise submitted that determination of the best language for the claims requires, and will likely be impacted by, the guidance expected once a decision is issued in the *Bilski* case.

### **35 U.S.C. § 103 Rejections**

In the Office Action, the Examiner rejected Claims 10, 14, 15, 17, 21, 22, 24, and 25 under 35 U.S.C. § 103(a), as being unpatentable over Widdicks et al. (On the Enhanced Convergence of Standard Lattice Methods for Option Pricing, 2002, “Widdicks”) and Claims 11-13, 16, 18-20, and 23 as being unpatentable over Widdicks in view of Breen (The Accelerated Binomial Option Pricing Model, 1991, “Breen”). Applicant traverses these rejections in view of the remarks that follow.

Each of Claims 10 and 17 includes, *inter alia*:

[computing] a value for node vega at each node of the binomial tree for the corresponding sub-period of time.

Applicant asserts and the Examiners agreed in the Interview of May 10, 2010, that neither Widdicks nor Breen teaches the calculation of node vega. Accordingly, Claims 10 and 17 are allowable over Widdicks and Breen.

Each of Claims 11-16 and 18-25 depends from, directly or indirectly, one of Claims 10 and 17, and therefore includes all the limitations of one of these claims. Therefore, Applicant respectfully asserts that Claims 11-16 and 18-25 are likewise allowable.

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### **New Claims**

Each of new Claims 26 and 27 depends from one of Claims 10 and 17, and therefore includes all the limitations of one of these claims, which as discussed are allowable. Therefore, Applicant respectfully asserts that Claims 26 and 27 are likewise allowable.

New Claim 28 includes, *inter alia*:

to calculate a value of vega for each tree using values of the option price calculated at nodes of a single tree.

Applicant asserts and the Examiners agreed in the Interview of May 10, 2010, that neither Widdicks nor Breen teaches at least this feature.

In particular, Widdicks excludes calculating vega from a *single* tree by teaching that “vega require[s] two lattices, each with a different ...  $\sigma$  [volatility]” (see the paragraph bridging pages 326-327 of Widdicks).

Breen teaches models, for example, the Binomial Option Pricing Model of Cox, Ross and Rubenstein (1979), known to use two trees to generate each value of vega.

Accordingly, Claim 28 is allowable over Widdicks and Breen.

### **Conclusion**

In view of the foregoing amendments and remarks, Applicant asserts that the pending claims are all allowable. Should the Examiner have any question or comment as to the form, content or entry of this paper, the Examiner is requested to contact the undersigned at the telephone number below. Similarly, if there are any further issues yet to be resolved to advance the prosecution of this application to issue, the Examiner is requested to telephone the undersigned counsel.

In addition, the Commissioner is hereby authorized to debit any and all fees due in connection with this submission and application from our Deposit Account No. 50-3355.

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Favorable reconsideration of the application and allowance are respectfully requested.

Respectfully submitted,

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Dated: May 13, 2010

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